

Claims 1 - 6 are in the case.

REJECTIONS:

Claims 1, 2, 5, and 6 were again rejected under 35 U.S.C. . 103(a) as obvious and unpatentable over the reference PERSSON (US 5,442,635) in view of the reference OHTA (US 5,878,277).

Claims 3 and 4 were again rejected under 35 U.S.C. . 103(a) as obvious and unpatentable over the reference PERSSON (US 5,442,635) in view of the reference OHTA (US 5,878,277), as applied to the other claims, further in view of the reference GALYAS ET AL (US6,206,157).

In response to the Applicants' arguments over the prior art in the preceding reply, the Examiner in an attempt to excuse the use of hindsight cites IN RE McLAUGHLIN and then concludes, without any supporting explanation or rebuttal to the Applicants' contention that the OHTA teaching is not, that PERSSON, OHTA, and GALYAS "are all in the same field of endeavor for the purpose of dividing a TDMA frame structure with dynamic slot allocation for operating in a mobile telephone system which operates in half duplex."

In reply to Applicants' pointing out that Figs. 2 - 2C of OHTA only show the allocation of the frequency bands, but not the allocation of time slots, the Examiner explains that in OHTA's system a time slot allocated to a user represents one of a number of available carrier frequencies and thus the term "frame slot" as used here is intended to include, e.g., both time slots and frequency slots.

He then contends that more generally the slot allocation permutation of Applicants' invention is then applied to the various TDM carrier time slots in a manner similar to that described by OHTA and can be implemented in a time division system, and one of skill in the art can readily adapt the cited teachings to implement a wide variety of different time division (TDMA), frequency division (FDMA) and code division (CDMA) systems.

In reply to Applicants' arguing that the cited references do not disclose "a greater number of time slots would be allocated in each downlink TDMA frame than in each uplink", the Examiner contends that OHTA discloses a communication system having at least two types of communication channels, which has a central station and a plurality of terminal stations connected through a bi-directional communication path such that the terminals communicate with each other through the central station. Figs. 2 - 2C are cited as showing the assignment of frequency bands used on a communication path in accordance with Applicants' invention in which an entire band 10 utilized for uplink signals transmitted from the terminals to the head end ranges from 10 - 50 MHz, while an entire band 20 utilized for downlink signals reversely transmitted from the head end to the terminal side ranges from 70 - 450 MHz (Col.8, lines 37 et seq.).

REPLY:

Again, to begin with, it should be seen that Claim 1 is directed to a method of operating a time division multiple access (TDMA) radio system wherein uplink and downlink transmissions between a mobile station and a base station are made in separate TDMA frames, and wherein a greater number of time slots is allocated in each downlink TDMA frame (i.e., direction base station -> mobile station) than in each uplink (direction mobile station -> base station) TDMA frame. Claim 5 defines a system with a similar feature and Claim 6 defines a device for use in a similar manner.

It has been recognized that while the PERSSON teaching also relates to a TDMA radio system in which transmissions are made between mobile and base stations, PERSSON does not disclose or suggest any desire to have a greater number of time slots allocated in each downlink TDMA frame than in each uplink TDMA frame. This is evidenced, for example, at Col. 5, lines 25 to 30, where it is stated that a transmission frame structure is provided including the same number of transmission time slots as reception time slots. Thus, PERSSON teaches nothing more pertinent to Applicants' invention than a TDMA radio system. The grounds for rejecting independent Claims 1, 5, and 6 attempts to fill the gap

posed by the lack of a showing of a greater number of time slots allocated in each downlink TDMA frame than in each uplink TDMA frame, by combining the teaching of OHTA with PERSSON, which combination purportedly would have been obvious to one of skill in order to achieve the Applicants' invention.

The essential point to be resolved, therefore, is the obviousness to the skilled artisan of combining the PERSSON and OHTA teachings as contended by the Examiner. As noted above, the Examiner has concluded that such a combination is proper since PERSSON, OHTA, and GALYAS "are all in the same field of endeavor for the purpose of dividing a TDMA frame structure with dynamic slot allocation for operating in a mobile telephone system which operates in half duplex." However, no reasons or evidence have been offered to support the conclusion that one of skill in the art would find them to be in the same field of endeavor. In response to this conclusion, Applicants' submit that 1) PERSSON and OHTA are not in the same field of endeavor, 2) there is no motivation in their teachings to combine them, and 3), even if combined in some manner, the result would not teach or suggest all of the claim limitations in Claims 1, 5, and 6 and their dependent claims.

Regarding the same field 1), Applicants again emphasize that OHTA does not involve a system with mobile stations but rather a cable TV network (CATV). There are no mobile stations or mobile communication devices in OHTA's cable TV network for use with TDMA communications such as explicitly defined in Applicants' Claims 1, 5, and 6. Cable TV devices are by definition necessarily connected to cables with limited mobility and would not be regarded as mobile stations or devices by those of skill in the art. Accordingly, those of skill in the field of mobile communications would not normally be led to seek solutions to problems in their field in the field of CATV. The only field that appears to be shared by OHTA and Applicants' invention is the communications field which is much too general and broad to relate the two teachings. Thus, OHTA's teaching would not be looked to by one of skill to contain or suggest anything applicable to the

mobile communications world as he would not regard it as being in the same field of endeavor (see MPEP . 706.02(j)).

Regarding motivation 2), it is settled law that even if the teachings of two prior art references could be combined, the mere fact that they can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination, to wit, "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." In re GORDON, 221 USPQ 1125, 1127 (Fed.Cir. 1984); In re MILLS, 16 USPQ2d 1430, 1432 (Fed.Cir. 1990). An obviousness rejection "clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art." In re WARNER and WARNER, 154 USPQ 173, 178 (C.C.P.A. 1967). "There must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the applicant's disclosure." In re DOW Chemical Co., 5 USPQ2d 1529, 1532 (Fed.Cir. 1988). There is absolutely no suggestion in either reference, and none has been cited, as to why it would be desirable to combine PERSSON and OHTA in the manner concocted by the Examiner. It is accordingly submitted that the combination of the PERSSON and OHTA teachings does not tend to or render Applicants' invention obvious, particularly as presently claimed, and that the pertinence of the combination has only been cited as a result of hindsight gained from Applicants' disclosure.

Finally, regarding the reference combination 3), even if one of skill for some reason sought to combine PERSSON and OHTA, any resulting combination could not teach or suggest all the limitations defined in Claims 1, 5, and 6, and their dependent claims, all of the claims in the application. It is clear to Applicants that the Examiner has studied their invention and then looked for references which somehow contain related features, but in so doing, he has selected the present references for perceived features therein, which features are actually not at all present in those references. For example, the Examiner states, at Page 4,

lines 2 - 11 of the Action, that OHTA discloses a communication system having two types of communication channels, and furthermore, that in Figs. 2A - C there is shown an uplink frequency band 10 and a downlink frequency band 20 broader in terms of frequency than the uplink frequency band. Accordingly, it may be assumed that the Examiner bases his rejection on the fact that since OHTA's downlink frequency band is broader than OHTA's uplink frequency band, the number of time slots allocated in each downlink frame would be greater than the number of time slots allocated in each uplink frame. However, when Figs. 2A - C and the corresponding description is analyzed, it firstly becomes very clear that the mentioned frequency bands are not frequency bands allocated to a single terminal but frequencies allocated to the whole CATV-system. Moreover, the fact that the downlink frequency band is broader does not mean that there would be more time slots allocated in downlink than in uplink. As to the matter of allocation of a number of time slots to individual mobile stations, attention is called to Col. 2, lines 32 - 48 and Fig. 10 of OHTA where some details of time slots in OHTA's cable TV system are actually disclosed. Here it is very clearly shown that each of OHTA's terminals has only one time slot in an uplink frame and only one time slot in a downlink frame, as especially evidenced by the passage which reads:

"A terminal station 51 uses an uplink time slot ts1 for transmission and a downlink time slot Ts1 for reception, respectively, while a terminal station 52 uses an uplink time slot ts2 for transmission and a downlink time slot Ts2 for reception, respectively.

Thus, the Examiner's contention and rejection is totally without a basis in fact. Neither PERSSON nor OHTA teach a mobile system in which a greater number of time slots in each downlink TDMA frame than in each uplink TDMA frame is allocated to a mobile station.

In conclusion then it should be noted that Claims 1, 5, and 6 concern allocation of a number of time slots to a mobile station or device not allocation of frequency bands to the whole system. Also, it should be noted that the allocation concerns TDMA frames such that in each downlink TDMA frame a greater number of time

slots is allocated than in each uplink TDMA frame. These allocation features are explicitly defined in all of Applicants' claims but are not taught or suggested by any of the cited references, taken alone or in any combination, so that all of Applicants' claims are submitted to patentably define and be patentably distinguishable over the prior art.

Accordingly, for the reasons set forth fully above and in the previous response, a prompt reconsideration and withdrawal of the claim rejections, allowance of the claims, and passage to issue of this application is respectfully solicited.

A one-month extension of time to respond to the outstanding Office Action is hereby petitioned. Please charge the fee for \$110.00 to cover the fee therefore and any other fees for the entry of this Amendment should be deducted from Deposit Account No. 16-1350.

It is noted that the formal drawings have been approved so that no further drawings need be submitted upon allowance of the case.

Respectfully submitted,

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